

INFO: Avoiding Memory Leaks and AccessViolationException with AbbyyEngine by using STAThread

NOTE: This article discusses a single aspect of the AbbyyEngine: for a more generalized overview please see

[INFO: AbbyyEngine - Overview](#)

DotImage provides an ability to perform OCR using the ABBYY engine (via our AbbyyEngine class). If you use this engine, then you should create, initialize, use and deinitialize it in a thread with a single-threaded apartment model, for additional info see the link:

[Abbyy KB: Using the Engine object](#)

ABBYY doesn't guarantee the work of its engine in MTA-threads, for instance, the violation of this requirement can cause a memory leak or an AccessViolation error inside the engine.

To set up the thread apartment model in C#, you need to mark your application entry-point method (usually it's the Main method) with STAThread attribute, OR, if you run an OCR operation in a separate thread, call the SetApartmentState method with ApartmentState.STA parameter before the separate thread run.

Code Snippet to Mark an Entry-point With STAThread Attribute

```
using System;

namespace Demo
{
    public static class Program
    {
        [STAThread]
        public static void Main(params string[] args)
        {
```

```
}
```

Code Snippet to Create an STA Thread

```
using System.Threading;

namespace Demo
{
    public class Utils
    {
        // threadWorkDelegate is a function that doesn't accept parameters, or
        accept one parameter as 'object'

        // type and has a 'void' return type

        // This function should create the ABBYY engine, process images and
        shutdown it.

        public static Thread CreateSTAThread(ThreadStart threadWorkDelegate)
        {
            var thread = new Thread(threadWorkDelegate);

            thread.SetApartmentState(ApartmentState.STA);

            //Other thread setup staff like making it background or not, set
            priority or culture settings.

            //thread.IsBackground = true;

            //thread.CurrentCulture = new CultureInfo("ru-ru");

            //etc.

            return thread;
        }
    }
}
```

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For Visual Basic, the default apartment model is STA, so no additional actions required.

Additional Resource Materials / Related Articles

[INFO:AbbyyEngine - Overview](#)

[MS KB: Understanding and Using COM Threading Models](#)

[Abbyy KB: Using the Engine object](#)

[ABBY KB: Message "Attempted to read or write protected memory"](#)

[OCRSDK.com KB: The filename or extension is too long](#)

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